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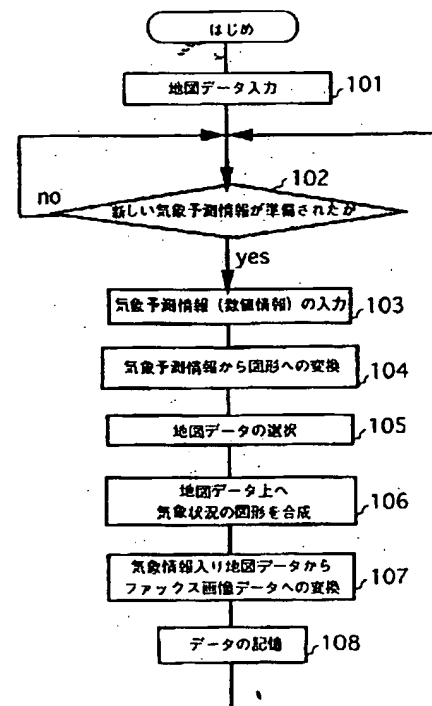
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(54) 【発明の名称】 気象情報提供方法及び装置

(57) 【要約】

【課題】 気象予測結果が得られる毎に、自動的にその気象予測結果に基づいた気象情報提供用データを作成することにより、低いコストで常に最新の気象情報を利用者に提供する方法及び装置を提供する。

【解決手段】 予め気象情報の対象地域を含む地図等の定型画像データを入力し記憶させておき、気象観測結果や機械による気象予測の結果が得られる毎にその気象情報データを入力し、入力された気象情報データをその気象状況を適切に表現する図形またはテキストに変換し、変換された図形またはテキストを地図などの定型画像データ上に合成し、合成結果である気象情報を含む画像データをインターネットのWWWサービスで情報提供できるHTML気象情報データやファクシミリ通信機器で受信できるファックス気象情報データに変換して記憶し、それをインターネットや電話回線を通じた利用者からの要求に応じて送出する。



【特許請求の範囲】

【請求項1】 通信回線を使って気象情報を提供する方法であって、

複数の定型画像データを予め記憶しておく、

現在までの気象状況及び予測された未来の気象状況の両方またはどちらかからなる気象情報データを入力し、入力された気象情報データをその気象状況を適切に表現する図形またはテキストに変換し、

複数の定型画像データからいくつかの定型画像データを選択し、

変換された図形またはテキストを選択された定型画像データと合成し、

合成された画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のHTML気象情報データに変換して記憶し、

気象情報データの入力から前記HTML気象情報データへの変換と記憶までの処理を新たな気象情報データの入力毎に行い、

通信回線を通じた利用者からの要求に応じて前記HTML気象情報データを送出することを特徴とする気象情報提供方法。

【請求項2】 通信回線を使って気象情報を提供する装置であって、

複数の定型画像データを予め記憶しておく手段と、

現在までの気象状況及び予測された未来の気象状況の両方またはどちらかからなる気象情報データを入力する手段と、

入力した気象情報データを気象状況を適切に表現する図形またはテキストに変換する手段と、

複数の定型画像データからいくつかの定型画像データを選択する手段と、

変換された図形またはテキストを選択された定型画像データと合成する手段と、

合成された画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のHTML気象情報データに変換して記憶する手段と、

新たな気象情報データが準備される毎に上記各手段を制御して新たなHTML気象予測データを作成し記憶させると共に、通信回線を通じた利用者からの要求に応じて記憶しているHTML気象情報データを送出する制御手段と、を有することを特徴とする気象情報提供装置。

【請求項3】 前記合成された画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のHTML気象情報データに変換して記憶し、通信回線を通じた利用者からの要求に応じて前記HTML気象情報データを送出することが、

ファクシミリ通信機器で受信できるファックス気象情報データに変換して記憶し、通信回線を通じた利用者からの要求に応じてファックス気象情報データを送出することを特徴とする請求項1に記載の気象情報提供方法。

【請求項4】 前記合成された画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のHTML気象情報データに変換して記憶する手段と、通信回線を通じた利用者からの要求に応じて記憶しているHTML気象情報データを送出する制御手段が、

気象状況を表した図形またはテキストと選択された定型画像データとが合成された画像データをファクシミリ通信機器で受信できるファックス気象情報データに変換して記憶する手段と、通信回線を通じた利用者からの要求に応じて記憶しているファックス気象情報データを送出する制御手段を有することを特徴とする請求項2に記載の気象情報提供装置。

【請求項5】 前記通信回線を通じた利用者からの要求が、

前記利用者からの要求に対して、発信元電話番号に基づき利用者の所在地域を特定し、当該地域の気象情報を含むファックス気象予測データを送出することを特徴とする請求項1または3に記載の気象情報提供方法。

【請求項6】 前記通信回線を通じた利用者からの要求が、

前記利用者からの要求に対して、発信元電話番号に基づき利用者の所在地域を特定し、当該地域の気象情報を含むファックス気象予測データを送出する制御手段を有することを特徴とする請求項2または4に記載の気象情報提供装置。

【請求項7】 通信回線を通じた利用者からの要求が、前記利用者からの要求に対して、利用者から気象情報を知りたい地域の電話番号を通信回線を通じて入力させることで地域を特定し、当該地域の気象情報を送出することを特徴とする請求項1または3に記載の気象情報提供方法。

【請求項8】 通信回線を通じた利用者からの要求が、前記利用者からの要求に対して、利用者から気象情報を知りたい地域の電話番号を通信回線を通じて入力させることで地域を特定し、当該地域の気象情報を送出する制御手段を有することを特徴とする請求項2または4に記載の気象情報提供装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、現在の気象情報や局所的・短時間の気象予測情報を提供する気象情報提供技術に関するものである。

【0002】

【従来の技術】現在、天気予報の電話案内サービスとして177がある。これは、様々な観測データ、例えば、気象レーダ画像、気圧、風向き、気温等の様々な数値データを気象予報士等が総合的に解釈して気象を予測し、その結果をテープ等に録音し、天気予報を提供する特定の電話番号にかかった電話に対しその録音内容を送出す

る方法である。

【0003】また、ファックスを使って気象情報を提供するサービスもある。これも、様々な観測データから人が気象を予測し、その結果から天気図などを描いてファックス画像データとして記憶しておき、利用者からの要求に応じてそれを送出するものである。

【0004】

【発明が解決しようとする課題】このような、従来の気象情報サービスでは、気象情報提供用の音声データまたはファックス画像データの作成を手で行っているため、データ更新に費用と時間がかかり気象情報を頻繁に更新することが容易ではなかった。従って、常に最新の気象情報を提供することが困難であった。

【0005】一方、気象観測技術や気象予測技術の発展に伴い、気象レーダ装置から得られる気象レーダ画像を利用し、局所的・短時間の気象レーダ画像を機械により予測する技術が開発されている。

【0006】本発明はこの最新の気象予測技術を使いながら前述した問題を解決し、気象予測結果が得られた時すぐに自動的にその気象予測結果に基づいた気象情報提供用データを作ることにより、低いコストで常に最新の気象情報を利用者に提供する方法及び装置を提供することを目的とする。

【0007】

【課題を解決するための手段】上記目的を達成するため、本発明は気象観測結果や気象予測結果が得られる毎に、地図などの気象変化に対して変化しない定型画像データとその気象情報を自動的に合成して、気象情報提供用データを自動的に更新する。

【0008】すなわち、まず予め気象情報の対象地域を含む地図等の定型画像データを入力し記憶させておき、気象観測結果や機械による気象予測の結果が得られるごとにその気象情報データを入力し、入力した気象情報データをその気象状況を適切に表現する図形またはテキストに変換し、変換された図形またはテキストを地図などの定型画像データ上に合成し、合成結果である気象情報を含む画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のデータ（HTML気象情報データ）やファクシミリ通信機器で受信できるようなファックス画像データ（ファックス気象情報データ）に変換して記憶し、それをインターネットや電話回線を通じた利用者からの要求に応じて送出することにより、低コストかつ人手の介在なしに常に最新の気象情報を提供するのである。

【0009】また、ファックスを用いて気象情報提供を行う場合、予め複数の地域の気象情報データを保持しておき、利用者から気象情報提供を行うセンタに電話がかかってきたとき、その発信元電話番号から利用者の所在地域を特定し、その地域の気象情報を提供するようにする。

【0010】また、予め複数の地域の気象情報データを保持しておき、利用者は気象情報提供を行うセンタに電話をかけた後インターネットを通じてアクセスすると共に、気象情報を知りたい地域の電話番号を入力することで地域を特定し、その地域の気象情報を提供するようにする。

【0011】また、上記目的を達成するための装置として、地図などの定型画像データを予め記憶しておく手段と、気象情報データを入力する手段と、入力した気象情報データをその気象状況を適切に表現する図形またはテキストに変換する手段と、変換された図形またはテキストを定型画像データ上に合成する手段と、合成結果である気象情報を含む画像データをインターネットのWWWサービスで情報提供できる情報表現用言語HTML形式のデータ（HTML気象情報データ）またはファクシミリ通信機器で受信できるようなファックス画像データ（ファックス気象情報データ）に変換して記憶する手段と、新たな気象情報データが入力される毎に上記各手段を制御してHTML気象情報データまたはファックス気象情報データを更新すると共に、利用者からの要求に応じて記憶している提供用データを送出する制御手段とを設ける。

【0012】気象観測データが気象レーダ等を用いて短時間の周期（例えば数分間隔）で得られる場合、このデータを基に気象予測データが数値データとして生成される。この数値データは、自動的に気象の状況を表す図形またはテキストに変換されて地図上に描かれて、気象情報提供用データが作られる。これは、気象観測データの取得の間隔（例えば数分間隔）で行われるため、気象情報提供用データは逐次更新されることになり、結果として常に最新の気象情報を提供することが可能となる。

【0013】

【発明の実施の形態】次に本発明の実施の形態について、図面を参照して、詳細に説明する。図1、図2、図3、図4は、本発明の気象情報提供方法の具体的実施例のフローチャートを示す図である。図1は本発明による気象情報提供サービスの気象情報提供用データの更新処理方法のフローチャート図、図2は本発明による気象情報提供サービスにおいて常に予め定めた地域の気象情報を提供する気象情報提供処理方法（その1）のフローチャート図、図3は本発明による気象情報提供サービスにおいて発信元電話番号により発信元を特定しその地域の気象情報を提供する気象情報提供処理方法（その2）のフローチャート図、図4は本発明による気象情報提供サービスにおいて利用者からの気象情報を知りたい地域の電話番号を受信しその地域の気象情報を提供する気象情報提供処理方法（その3）のフローチャート図である。図5は定型画像データの一例を示す図である。

【0014】本実施例では、既存の気象予測システムを用い、そのシステムから気象予測結果の数値データが得

られるとして以下の説明をする。

【0015】気象情報提供サービスのセンターは、予め気象情報提供の定型画像データをデータベースとして保持している。図5に定型画像データの一例を示す。図5に示すように、気象情報サービスのタイトル画像、地域名、地図、気象警報・注意報、気象状況コメント、広告などのデータである。

【0016】気象予測システムは、数分間隔で入力される気象レーダ等の画像から各地域の数時間後の予測降水量等を数値データとして生成し、これを読み込む。気象予測システムから入力される気象情報を表す数値データは、例えば、地域コード、予測データタイプ、予測データ、予測時刻、観測時刻等である。

【0017】地域コードは気象情報がどの地域に対するものかを示すコードである。予測データタイプは、予測データの数値が降水量、波高、風向き、風力、気温などのどの種類の予測データかを示すコードである。予測データは、降水量、波高、風向き、風力、気温などの量、角度、強さ、温度を表す数値である。観測時刻と予測時刻はそれぞれ気象予測に使用した気象観測情報の観測時刻と、予測データが何時の気象状況かを示す。

【0018】図1を用いて、本発明による気象情報提供サービスの気象情報提供用データの更新処理方法を説明する。本発明による気象情報提供サービスでは、図1に示すように、まず定型画像データを読み込み、定型画像データのデータベースに格納する(101)。これは、定型画像データのデータベースが構築されてしまえば、言うまでもなくその内容に変更がない限り新たなデータの読み込みは必要ない。

【0019】次に、気象予測システムで新たな気象予測情報が準備されたかどうか調べる(102)。準備された場合、数値データである気象予測情報を読み込む(103)。

【0020】次に、読み込んだ気象予測情報から気象情報を表す図形またはテキストに変換する。例えば、観測時刻及び予測時刻から年月日と時刻の文字(テキスト)へ、地域コードから地域を表す文字へ変換する。

【0021】また、予測データタイプと予測データから、図6に示すようなその気象状況を適切に表す図形に変換する(104)。例えば、予測データタイプが降水量で予測データが 0mm/h (1時間の降水量が0ミリ)のときは図6の晴天の図形に変換し、予測データが 1mm/h 以下のときはくもりの図形に変換し、予測データが 20mm/h 以下のときは雨の図形に変換し、予測データが 20mm/h 以上のときは大雨の図形に変換するなどである。

【0022】次に、地域コードに基づいて定型画像データのデータベース中からその地域の地図データを選択し(105)、その地図上に気象状況を表す図形を合成する(106)。

【0023】次に、合成結果の画像とサービスのタイトルや気象警報・注意報や広告などの定型画像データを合わせてファックス1枚に適切に情報が入るように編集し、それをファックスで送信できるデータ形式に変換し(107)、記憶する(108)。最終的に記憶されるファックス気象情報画像の例を図7に示す。

【0024】この一連の処理を、新しい気象予測情報が準備されることに行うことにより、常に最新の気象情報が入ったファックス用データを用意する。

【0025】次に、図2を用いて、本発明による気象情報提供サービスの気象情報提供処理方法(その1)を説明する。まず、利用者からの電話の着信を検出する(201)。次に、記憶している最新のファックス気象画像データを読み出し(202)、それを利用者のファックスに向けて送信する(203)。

【0026】図3を用いて、もう一つの本発明による気象情報提供サービスの気象情報提供処理方法(その2)を説明する。まず、利用者からの電話の着信を検出する(301)。次に、電話網の発信元電話番号通知機能により通知された発信元電話番号を検出する(302)。次に、その発信元電話番号の市外局番などから発信者の所在地を特定し(303)、記憶している各地のファックス気象画像データの中からその地域のデータを読み出し(304)、それを利用者のファックスに向けて送信する(305)。

【0027】図4を用いて、さらに別の本発明による気象情報提供サービスの気象情報提供処理方法(その3)を説明する。まず、利用者からの電話の着信を検出する(401)。次に、利用者に対し気象情報を知りたい地域の電話番号をダイヤルする旨の音声を送出する(402)。次に、利用者から送信されてくるダイヤル信号を受信することで地域の電話番号を取得する(403)。次に、その電話番号から気象情報を提供する地域を特定し(404)、記憶している各地のファックス気象画像データの中からその地域のデータを読み出し(405)、それを利用者のファックスに向けて送信する(406)。

【0028】図8は、本発明による気象情報提供装置の一実施例である。図に示すように、本発明の気象情報提供装置は、気象情報データ入力部801と、定型画像データ記憶部802と、定型画像選択部803と、図形テキスト変換部804と、画像合成部805と、FAXデータ変換部806と、提供データ記憶部807と、提供データ選択部808と、発信元電話番号検出部809と、電話送受信部810から構成されている。その動作は、既に詳細に説明されているので省略する。

【0029】なお、本実施例はファックスに気象情報を提供する例を示したが、インターネットのWWWサービスを用いて利用者のパソコン等に気象情報を提供することもできる。その場合は、定型画像データと気象状況を

表す図形やテキストを合成した画像をインターネットのWWWサービスで用いるHTMLデータに変換し記憶しておき、利用者からインターネットを通じて要求が来たとき、そのHTML気象情報データを利用者に向けて送出することにより実現できる。

【0030】

【発明の効果】以上述べたように、本発明によれば、予測データが逐次更新されるたびに気象提供サービスのデータも自動的に更新されるため、利用者に常に最新の情報をサービスすることが可能となる。

【図面の簡単な説明】

【図1】本発明による気象情報提供サービスの気象情報提供用データの更新処理方法のフローチャート図である。

【図2】本発明による気象情報提供サービスにおいて常に予め定めた地域の気象情報を提供する気象情報提供処理方法のフローチャート図である。

【図3】本発明による気象情報提供サービスにおいて発信元電話番号により発信元を特定しその地域の気象情報を提供する気象情報提供処理方法のフローチャート図である。

【図4】本発明による気象情報提供サービスにおいて利

用者からの気象情報を知りたい地域の電話番号を受信しその地域の気象情報を提供する気象情報提供処理方法のフローチャート図である。

【図5】定型画像データの一例を示す図である。

【図6】気象状況を適切に表す図形の例を示す気象状況表示図形である。

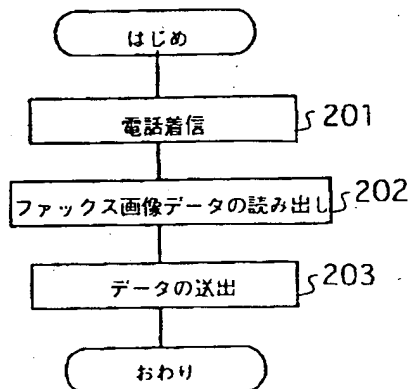
【図7】最終的に記憶されるファックス気象情報画像の例を示す図である。

【図8】本発明による気象情報提供装置の一実施例を示すブロック図である。

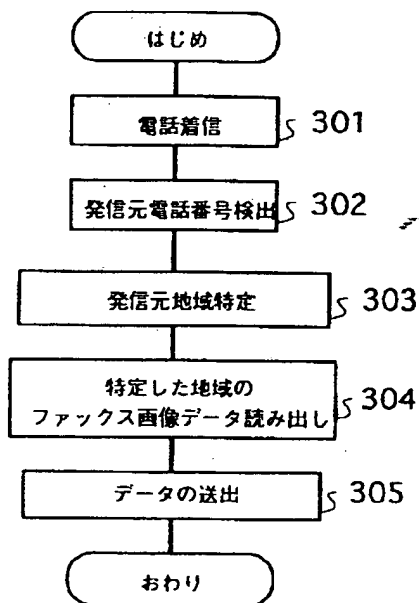
【符号の説明】

- 801 気象情報データ入力部
- 802 定型画像データ記憶部
- 803 定型画像選択部
- 804 図形テキスト変換部
- 805 画像合成部
- 806 FAXデータ変換部
- 807 提供データ記憶部
- 808 提供データ選択部
- 809 発信元電話番号検出部
- 810 電話送受信部

【図2】



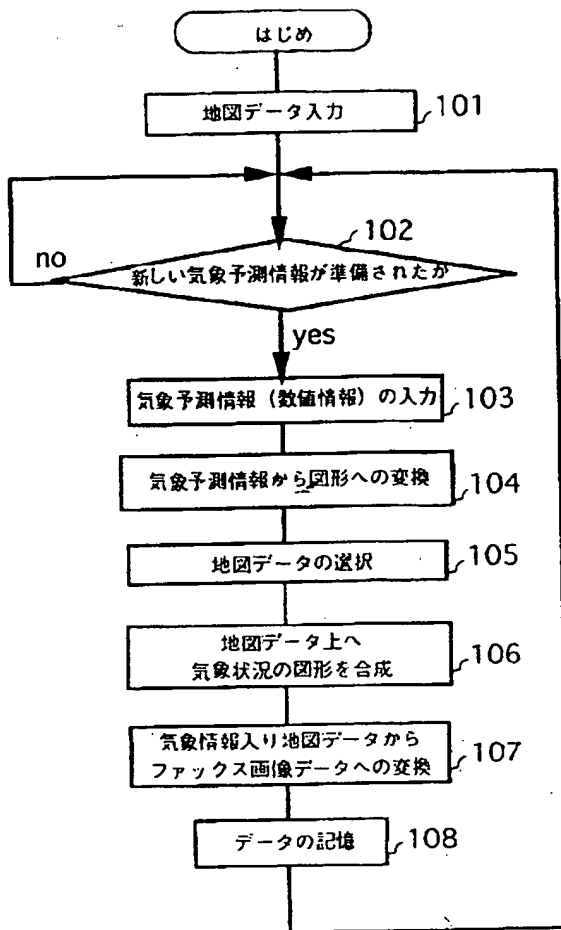
【図3】



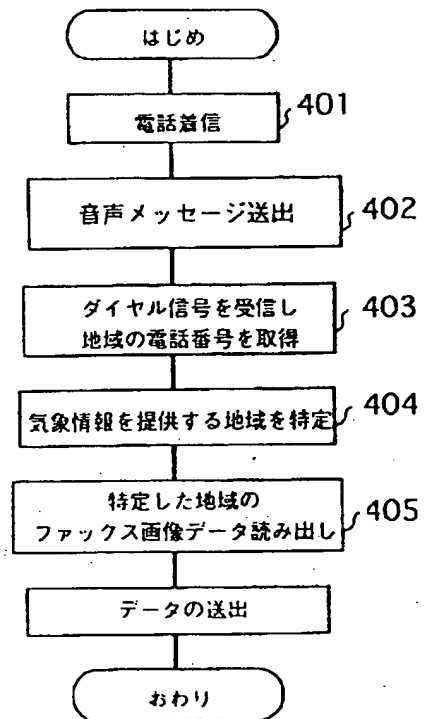
【図6】

晴天	
くもり	
雨 (降水量 20mm/h以下)	
大雨 (降水量 20mm/h以上)	
雪 (降水量 20mm/h以下)	
大雪 (降水量 20mm/h以上)	

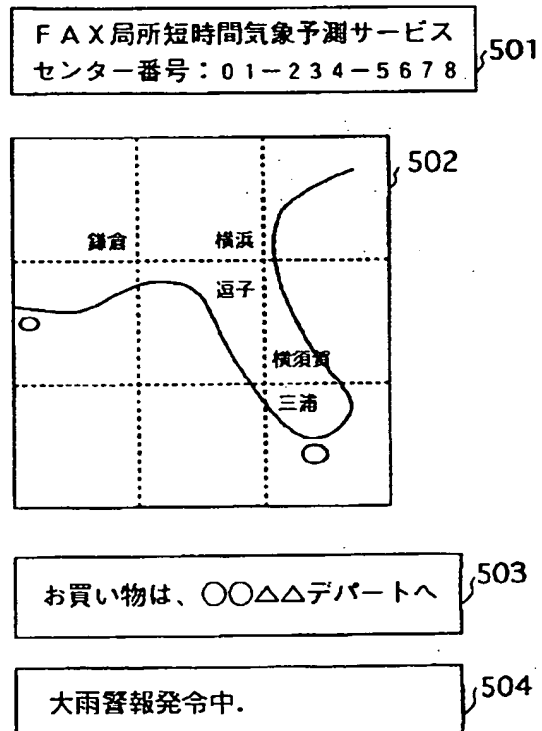
【図1】



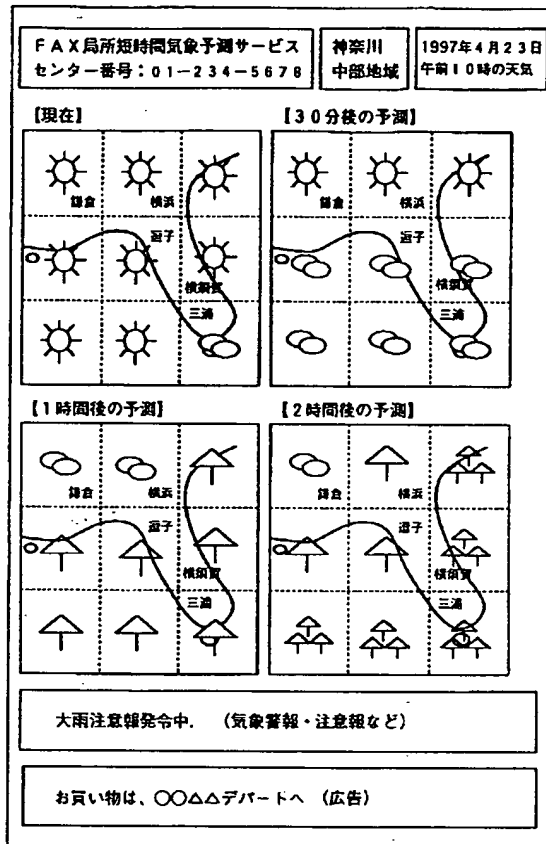
【図4】



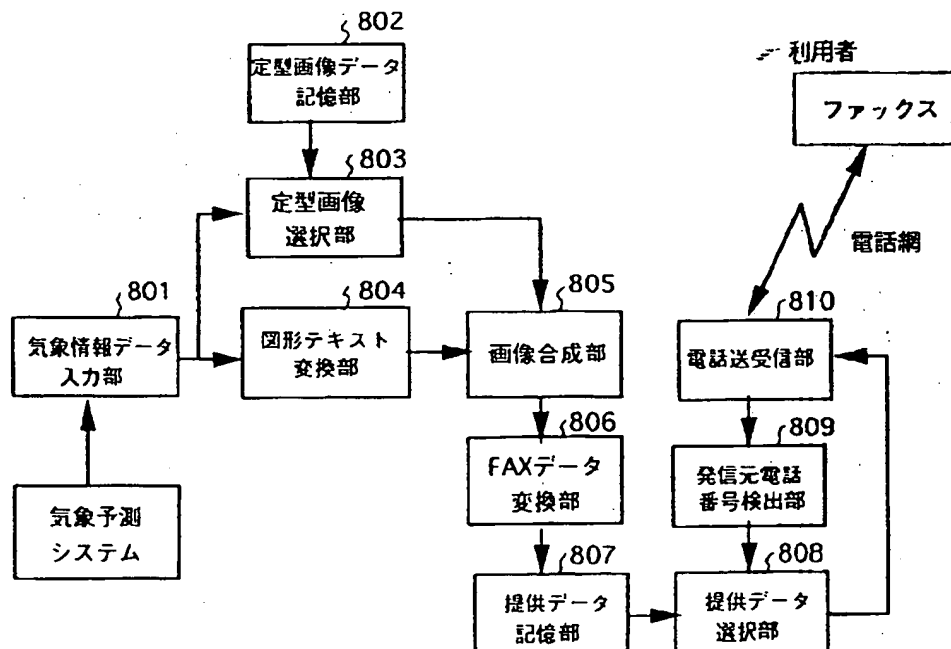
【図5】



【図7】



【図8】



フロントページの続き

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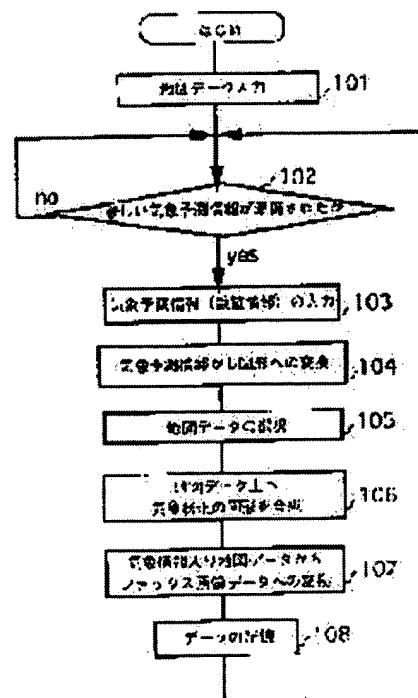
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(54) METHOD AND EQUIPMENT FOR PROVIDING METEOROLOGICAL INFORMATION

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method and equipment for providing a user with the latest meteorological information at all times at a low cost by preparing automatically the data for providing the meteorological information which are based on the result of meteorological preestimate, every time when this result is obtained.

SOLUTION: Definite-form image data such as a map containing an object region of meteorological information are inputted and stored beforehand, and every time when the result of meteorological observation or the result of meteorological preestimate by an instrument is obtained, the meteorological information data thereon are inputted (103). The meteorological information data inputted are converted into a graphic or a text expressing adequately meteorological conditions shown by the data (104) and the graphic or the text obtained by the conversion is superposed to be synthesized on the definite-form image data such as the map (106). Image



data containing the meteorological information being the result of the synthesis are converted into HTML meteorological information data which can be provided as information by a WWW service of the Internet or fax meteorological information data which can be received by facsimile communication equipment and are stored (107, 108) and these data are sent out in response to a request from a user through the Internet or a telephone circuit.

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CLAIMS

[Claim(s)]

[Claim 1] Are the approach of offering weather intelligence using a communication line, and two or more fixed form image data is memorized beforehand. The weather intelligence data which consist of either both a weather situation by the present or a weather situation of the predicted future are inputted. The inputted weather intelligence data are changed into the graphic form or text which expresses the weather situation appropriately. It compounds with the fixed form image data which some fixed form image data was chosen [image data] from two or more fixed form image data, and had the changed graphic form or text chosen. With WWW service of the Internet, change the compounded image data into the HTML weather intelligence data of the information expression declinable word word HTML format which makes information offer, and it is memorized. The weather intelligence offer approach characterized by sending out said HTML weather intelligence data according to the demand from a user which performed conversion to said HTML weather intelligence data from a weather intelligence entry of data, and processing to storage for every new weather intelligence entry of data, and led the communication line.

[Claim 2] A means to be equipment which offers weather intelligence using a communication line, and to memorize beforehand two or more fixed form image data, A means to input the weather intelligence data which consist of either both a weather situation by the present, or a weather situation of the predicted future, A means to change the inputted weather intelligence data into the graphic form or text which expresses a weather situation appropriately, A means to choose some fixed form image data from two or more fixed form image data, The fixed form image data which had the changed graphic form or text chosen, and a means to compound, A means to change the compounded image data into the HTML weather intelligence data of the information expression declinable word word HTML format which makes information offer, and to memorize it with WWW service of the Internet, Whenever new weather intelligence data are prepared, while controlling each above-mentioned means and making new HTML weather prediction data create and memorize Weather intelligence offer equipment characterized by having the control means which sends out the HTML weather intelligence data which have memorized the communication line according to the demand from a user which led.

[Claim 3] With WWW service of the Internet, change said compounded image data into the HTML weather intelligence data of the information expression declinable word word HTML format which makes information offer, and it is memorized. Sending out said HTML weather intelligence data according to the demand from a user which led the communication line The weather intelligence offer approach according to claim 1 characterized by sending out facsimile weather intelligence data according to the demand from a user which changed into facsimile weather intelligence data receivable [with facsimile communication equipment], memorized, and led the communication line.

[Claim 4] A means to change said compounded image data into the HTML weather intelligence data of the information expression declinable word word HTML format which makes information offer, and to memorize it with WWW service of the Internet, The control means which sends out the HTML weather intelligence data which have memorized the communication line according to the demand from a user

which led A means to change into facsimile weather intelligence data receivable [with facsimile communication equipment] the image data by which the graphic form or text showing a weather situation, and the selected fixed form image data were compounded, and to memorize it, Weather intelligence offer equipment according to claim 2 characterized by having the control means which sends out the facsimile weather meteorological data which has memorized the communication line according to the demand from a user which led.

[Claim 5] The weather intelligence offer approach according to claim 1 or 3 characterized by sending out the facsimile weather prediction data with which the demand from a user which led said communication line specifies a user's location area based on the sending agency telephone number, and contains the weather intelligence of the area concerned to the demand from said user.

[Claim 6] Weather intelligence offer equipment according to claim 2 or 4 characterized by having the control means which sends out the facsimile weather prediction data with which the demand from a user which led said communication line specifies a user's location area based on the sending agency telephone number, and contains the weather intelligence of the area concerned to the demand from said user.

[Claim 7] The weather intelligence offer approach according to claim 1 or 3 characterized by specifying an area because the demand from a user which led the communication line makes the telephone number of the area which wants to know weather intelligence from a user input through a communication line to the demand from said user, and sending out the weather intelligence of the area concerned.

[Claim 8] Weather intelligence offer equipment according to claim 2 or 4 characterized by having the control means which specifies an area because the demand from a user which led the communication line makes the telephone number of the area which wants to know weather intelligence from a user input through a communication line to the demand from said user, and sends out the weather intelligence of the area concerned.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the weather intelligence offer technique of offering current weather intelligence and the weather prediction information on local and a short time.

[0002]

[Description of the Prior Art] There is 177 as telephone directory assistance service of current and a weather report. This is the approach of sending out the content of sound recording of pair *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne. to the telephone concerning the specific telephone number which a certificated weather forecaster etc. interprets synthetically various numeric data, such as various observation data, for example, a weather-radar image, an atmospheric pressure, a wind, and atmospheric temperature, predicts the weather, records the result on a tape etc., and offers a weather report.

[0003] Moreover, there is also service which offers weather intelligence using facsimile. People predict the weather from various observation data, and a synoptic weather chart etc. is drawn from the result, it memorizes as facsimile image data, and this also sends it out according to the demand from a user.

[0004]

[Problem(s) to be Solved by the Invention] Since the help was performing creation of the voice data for weather intelligence offer, or facsimile image data with such conventional weather intelligence service, it was not easy for renewal of data to take costs and time amount, and to update weather intelligence frequently. Therefore, it was difficult to always offer the newest weather intelligence.

[0005] On the other hand, the weather-radar image obtained from weather-radar equipment is used with development of a meteorological observation technique and a weather prediction technique, and the technique which predicts the weather-radar image of local and a short time with a machine is developed.

[0006] When this invention solves the problem mentioned above while using this newest weather prediction technique and a weather prediction result is obtained, it always aims at offering the approach and equipment which provide a user with the newest weather intelligence at low cost by making the data for weather intelligence offer based on that weather prediction result automatically immediately.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned object, whenever a meteorological observation result and a weather prediction result are obtained, this invention compounds automatically the fixed form image data which does not change to weather change of a map etc., and its weather intelligence, and updates the data for weather intelligence offer automatically.

[0008] Namely, fixed form image data, such as a map which includes the region for weather intelligence beforehand first, is made to input and memorize. Whenever the result of the weather prediction by the meteorological observation result or the machine is obtained, the weather intelligence data is inputted. The inputted weather intelligence data are changed into the graphic form or text which expresses the weather situation appropriately. The changed graphic form or text is compounded on fixed form image

data, such as a map. The weather intelligence which is a synthetic result Change into the facsimile image data (facsimile weather intelligence data) which can receive the included image data with data (HTML weather intelligence data) and facsimile communication equipment of the information expression declinable word word HTML format which makes information offer with WWW service of the Internet, and it memorizes. By sending it out according to the demand from a user which led the Internet and the telephone line, the newest weather intelligence is have [no inclusion of low cost and a help] always offered.

[0009] Moreover, when performing weather intelligence offer using facsimile, the weather intelligence data of two or more areas are held beforehand, when the center which performs weather intelligence offer from a user has got the telephone call, a user's location area is specified from the dispatch former telephone number, and the weather intelligence of the area is offered.

[0010] Moreover, the weather intelligence data of two or more areas are held beforehand, and a user specifies an area in inputting the telephone number of the area which wants to know weather intelligence, and offers the weather intelligence of the area while he telephones the center which performs weather intelligence offer or accesses it through the Internet.

[0011] Moreover, a means to memorize fixed form image data, such as a map, beforehand as equipment for attaining the above-mentioned object, A means to input weather intelligence data, and a means to change the inputted weather intelligence data into the graphic form or text which expresses the weather situation appropriately, A means to compound the changed graphic form or text on fixed form image data, The weather intelligence which is a synthetic result A means to change into the facsimile image data (facsimile weather intelligence data) which can receive the included image data with the data (HTML weather intelligence data) or facsimile communication equipment of an information expression declinable word word HTML format which makes information offer with WWW service of the Internet, and to memorize, Whenever new weather intelligence data are inputted, while controlling each above-mentioned means and updating HTML weather intelligence data or facsimile weather intelligence data, the control means which sends out the data for offer memorized according to the demand from a user is established.

[0012] When meteorological observation data are obtained with a short-time period (for example, several minute spacing) using a weather radar etc., weather prediction data are generated as numeric data based on this data. This numeric data is changed into the graphic form or text which expresses the situation of the weather automatically, it is drawn on a map, and the data for weather intelligence offer are made. Since this is performed at intervals of acquisition of meteorological observation data (for example, several minute spacing), the data for weather intelligence offer will be updated serially, and become possible [always offering the newest weather intelligence as a result].

[0013]

[Embodiment of the Invention] Next, the gestalt of operation of this invention is explained to a detail with reference to a drawing. Drawing 1 , drawing 2 , drawing 3 , and drawing 4 are drawings showing the flow chart of the concrete example of the weather intelligence offer approach of this invention. Flow chart drawing of the update process approach of the data for weather intelligence offer of weather intelligence offer service according [drawing 1] to this invention, Flow chart drawing of the weather intelligence offer art (the 1) which offers the weather intelligence of an area which always defined drawing 2 beforehand in the weather intelligence offer service by this invention, Flow chart drawing of the weather intelligence offer art (the 2) which drawing 3 specifies a sending agency with the sending agency telephone number in the weather intelligence offer service by this invention, and offers the weather intelligence of the area, Drawing 4 is flow chart drawing of the weather intelligence offer art (the 3) which receives the telephone number of the area which wants to know the weather intelligence from a user in the weather intelligence offer service by this invention, and offers the weather intelligence of the area. Drawing 5 is drawing showing an example of fixed form image data.

[0014] In this example, using the existing weather prediction system, the following explanation is given noting that the numeric data of a weather prediction result is obtained from the system.

[0015] The pin center,large of weather intelligence offer service has held the fixed form image data of

weather intelligence offer as a database beforehand. An example of fixed form image data is shown in drawing 5 . As shown in drawing 5 , they are data, such as the title image of weather intelligence service, an area name, a map, a weather warning and a warning, a weather situation comment, and an advertisement.

[0016] A weather prediction system generates the prediction rainfall several hours after an every place region etc. as numeric data from images, such as a weather radar inputted at intervals of several minutes, and reads this. The numeric data showing the weather intelligence inputted from a weather prediction system are an area code, a prediction data type, prediction data, prediction time of day, observation time of day, etc.

[0017] An area code is a code weather intelligence indicates it to be the thing to which area it is. A prediction data type is a code the numeric value of prediction data indicates it to be whether it is prediction data of classes of throat, such as rainfall, the wave height, a wind, a wind force, and atmospheric temperature. Prediction data are a numeric value which expresses temperature in amounts, such as rainfall, the wave height, a wind, a wind force, and atmospheric temperature, an include angle, and strength. Prediction data indicate it to be the observation time of day of the meteorological observation information which used observation time of day and prediction time of day for weather prediction, respectively what time a weather situation is.

[0018] The update process approach of the data for weather intelligence offer the weather intelligence offer service by this invention is explained using drawing 1 . With the weather intelligence offer service by this invention, as shown in drawing 1 , fixed form image data is read first and it stores in the database of fixed form image data (101). If the database of fixed form image data will be built, unless this will have modification in the content needless to say, it is unnecessary in reading of new data.

[0019] Next, it investigates whether new weather prediction information was prepared by the weather prediction system (102). When prepared, the weather prediction information which is numeric data is read (103).

[0020] Next, it changes into the graphic form or text showing weather intelligence from the read weather prediction information. For example, it changes into the alphabetic character with which an area is expressed from an area code to the alphabetic character (text) of a date and time of day from observation time of day and prediction time of day.

[0021] Moreover, it changes into the graphic form which expresses appropriately the weather situation as shown in drawing 6 from a prediction data type and prediction data (104). For example, it is prediction data's changing into the graphic form of the fine weather of drawing 6 with rainfall, when a prediction data type's is 0 mm/h (the rainfall of 1 hour is 0mm), changing into a cloudy graphic form, when prediction data's are 1 or less mm/h, changing into a rain graphic form, when prediction data's are 20 or less mm/h, and changing into the graphic form of heavy rain, when prediction data's are 20 or more mm/h etc.

[0022] Next, based on an area code, the map data of the area are chosen from the databases of fixed form image data (105), and the graphic form which expresses a weather situation on the map is compounded (106).

[0023] Next, it edits so that fixed form image data, such as the title, and a weather warning and a warning of service, and an advertisement, may be doubled with the image of a synthetic result and information may go into one facsimile appropriately, and it is changed and (107) memorized to the data format which can be transmitted by facsimile (108). The example of the facsimile weather intelligence image memorized eventually is shown in drawing 7 .

[0024] The data for facsimile into which the newest weather intelligence always went are prepared by performing it, whenever this the processing of a series of is prepared for new weather prediction information.

[0025] Next, the weather intelligence offer art (the 1) of the weather intelligence offer service by this invention is explained using drawing 2 . First, the arrival of the telephone from a user is detected (201). Next, the memorized newest facsimile weather image data is read (202), and it is turned to facsimile of a user and it transmits (203).

[0026] The weather intelligence offer art (the 2) of the weather intelligence offer service by another this invention is explained using drawing 3 . First, the arrival of the telephone from a user is detected (301). Next, the sending agency telephone number notified by the advice function of the sending agency telephone number of a telephone network is detected (302). Next, the data of the area are read out of the facsimile weather image data of every place which has pinpointed and (303) memorized an addresser's address from the area code of the dispatch former telephone number etc. (304), and it is turned to facsimile of a user and it transmits (305).

[0027] The weather intelligence offer art (the 3) of the weather intelligence offer service by still more nearly another this invention is explained using drawing 4 . First, the arrival of the telephone from a user is detected (401). Next, the voice of the purport which dials the telephone number of the area which wants to know weather intelligence to a user is sent out (402). Next, the telephone number of an area is acquired by receiving the dial signal transmitted by the user (403). Next, the area which offers weather intelligence from the telephone number is specified (404), and the data of the area are read out of the facsimile weather image data of memorized every place (405), and it is turned to facsimile of a user and it transmits (406).

[0028] Drawing 8 is one example of the weather intelligence offer equipment by this invention. As shown in drawing, the weather intelligence offer equipment of this invention consists of the weather intelligence data input section 801, the fixed form image data storage section 802, the fixed form image selection section 803, the graphic form text converter 804, the image composition section 805, the FAX data-conversion section 806, the offer data storage section 807, the offer data selection section 808, a sending agency telephone number detecting element 809, and the telephone transceiver section 810. Since it is already explained to the detail, the actuation is omitted.

[0029] In addition, although this example showed the example which offers weather intelligence to facsimile, it can also provide a user's personal computer etc. with weather intelligence using WWW service of the Internet. In that case, the image which compounded the graphic form showing fixed form image data and a weather situation and the text is changed into the HTML data used with WWW service of the Internet, and is memorized, and when a demand comes through the Internet from a user, it can realize by turning and sending out the HTML weather intelligence data to a user.

[0030]

[Effect of the Invention] Since the data of weather offer service are also automatically updated according to this invention whenever prediction data are updated serially as stated above, it becomes possible to always serve the newest information for a user.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the weather intelligence offer technique of offering current weather intelligence and the weather prediction information on local and a short time.

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PRIOR ART

[Description of the Prior Art] There is 177 as telephone directory assistance service of current and a weather report. This is the approach of sending out the content of sound recording of pair *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne. to the telephone concerning the specific telephone number which a certificated weather forecaster etc. interprets synthetically various numeric data, such as various observation data, for example, a weather-radar image, an atmospheric pressure, a wind, and atmospheric temperature, predicts the weather, records the result on a tape etc., and offers a weather report.

[0003] Moreover, there is also service which offers weather intelligence using facsimile. People predict the weather from various observation data, and a synoptic weather chart etc. is drawn from the result, it memorizes as facsimile image data, and this also sends it out according to the demand from a user.

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EFFECT OF THE INVENTION

[Effect of the Invention] Since the data of weather offer service are also automatically updated according to this invention whenever prediction data are updated serially as stated above, it becomes possible to always serve the newest information for a user.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Since the help was performing creation of the voice data for weather intelligence offer, or facsimile image data with such conventional weather intelligence service, it was not easy for renewal of data to take costs and time amount, and to update weather intelligence frequently. Therefore, it was difficult to always offer the newest weather intelligence.

[0005] On the other hand, the weather-radar image obtained from weather-radar equipment is used with development of a meteorological observation technique and a weather prediction technique, and the technique which predicts the weather-radar image of local and a short time with a machine is developed.

[0006] When this invention solves the problem mentioned above while using this newest weather prediction technique and a weather prediction result is obtained, it always aims at offering the approach and equipment which provide a user with the newest weather intelligence at low cost by making the data for weather intelligence offer based on that weather prediction result automatically immediately.

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MEANS

[Means for Solving the Problem] In order to attain the above-mentioned object, whenever a meteorological observation result and a weather prediction result are obtained, this invention compounds automatically the fixed form image data which does not change to weather change of a map etc., and its weather intelligence, and updates the data for weather intelligence offer automatically.

[0008] Namely, fixed form image data, such as a map which includes the region for weather intelligence beforehand first, is made to input and memorize. Whenever the result of the weather prediction by the meteorological observation result or the machine is obtained, the weather intelligence data is inputted. The inputted weather intelligence data are changed into the graphic form or text which expresses the weather situation appropriately. The changed graphic form or text is compounded on fixed form image data, such as a map. The weather intelligence which is a synthetic result Change into the facsimile image data (facsimile weather intelligence data) which can receive the included image data with data (HTML weather intelligence data) and facsimile communication equipment of the information expression declinable word word HTML format which makes information offer with WWW service of the Internet, and it memorizes. By sending it out according to the demand from a user which led the Internet and the telephone line, the newest weather intelligence is have [no inclusion of low cost and a help] always offered.

[0009] Moreover, when performing weather intelligence offer using facsimile, the weather intelligence data of two or more areas are held beforehand, when the center which performs weather intelligence offer from a user has got the telephone call, a user's location area is specified from the dispatch former telephone number, and the weather intelligence of the area is offered.

[0010] Moreover, the weather intelligence data of two or more areas are held beforehand, and a user specifies an area in inputting the telephone number of the area which wants to know weather intelligence, and offers the weather intelligence of the area while he telephones the center which performs weather intelligence offer or accesses it through the Internet.

[0011] Moreover, a means to memorize fixed form image data, such as a map, beforehand as equipment for attaining the above-mentioned object, A means to input weather intelligence data, and a means to change the inputted weather intelligence data into the graphic form or text which expresses the weather situation appropriately, A means to compound the changed graphic form or text on fixed form image data, The weather intelligence which is a synthetic result A means to change into the facsimile image data (facsimile weather intelligence data) which can receive the included image data with the data (HTML weather intelligence data) or facsimile communication equipment of an information expression declinable word word HTML format which makes information offer with WWW service of the Internet, and to memorize, Whenever new weather intelligence data are inputted, while controlling each above-mentioned means and updating HTML weather intelligence data or facsimile weather intelligence data, the control means which sends out the data for offer memorized according to the demand from a user is established.

[0012] When meteorological observation data are obtained with a short-time period (for example, several minute spacing) using a weather radar etc., weather prediction data are generated as numeric

data based on this data. This numeric data is changed into the graphic form or text which expresses the situation of the weather automatically, it is drawn on a map, and the data for weather intelligence offer are made. Since this is performed at intervals of acquisition of meteorological observation data (for example, several minute spacing), the data for weather intelligence offer will be updated serially, and become possible [always offering the newest weather intelligence as a result].

[0013]

[Embodiment of the Invention] Next, the gestalt of operation of this invention is explained to a detail with reference to a drawing. Drawing 1 , drawing 2 , drawing 3 , and drawing 4 are drawings showing the flow chart of the concrete example of the weather intelligence offer approach of this invention. Flow chart drawing of the update process approach of the data for weather intelligence offer of weather intelligence offer service according [drawing 1] to this invention, Flow chart drawing of the weather intelligence offer art (the 1) which offers the weather intelligence of an area which always defined drawing 2 beforehand in the weather intelligence offer service by this invention, Flow chart drawing of the weather intelligence offer art (the 2) which drawing 3 specifies a sending agency with the sending agency telephone number in the weather intelligence offer service by this invention, and offers the weather intelligence of the area, Drawing 4 is flow chart drawing of the weather intelligence offer art (the 3) which receives the telephone number of the area which wants to know the weather intelligence from a user in the weather intelligence offer service by this invention, and offers the weather intelligence of the area. Drawing 5 is drawing showing an example of fixed form image data.

[0014] In this example, using the existing weather prediction system, the following explanation is given noting that the numeric data of a weather prediction result is obtained from the system.

[0015] The pin center, large of weather intelligence offer service has held the fixed form image data of weather intelligence offer as a database beforehand. An example of fixed form image data is shown in drawing 5 . As shown in drawing 5 , they are data, such as the title image of weather intelligence service, an area name, a map, a weather warning and a warning, a weather situation comment, and an advertisement.

[0016] A weather prediction system generates the prediction rainfall several hours after an every place region etc. as numeric data from images, such as a weather radar inputted at intervals of several minutes, and reads this. The numeric data showing the weather intelligence inputted from a weather prediction system are an area code, a prediction data type, prediction data, prediction time of day, observation time of day, etc.

[0017] An area code is a code weather intelligence indicates it to be the thing to which area it is. A prediction data type is a code the numeric value of prediction data indicates it to be whether it is prediction data of classes of throat, such as rainfall, the wave height, a wind, a wind force, and atmospheric temperature. Prediction data are a numeric value which expresses temperature in amounts, such as rainfall, the wave height, a wind, a wind force, and atmospheric temperature, an include angle, and strength. Prediction data indicate it to be the observation time of day of the meteorological observation information which used observation time of day and prediction time of day for weather prediction, respectively what time a weather situation is.

[0018] The update process approach of the data for weather intelligence offer the weather intelligence offer service by this invention is explained using drawing 1 . With the weather intelligence offer service by this invention, as shown in drawing 1 , fixed form image data is read first and it stores in the database of fixed form image data (101). If the database of fixed form image data will be built, unless this will have modification in the content needless to say, it is unnecessary in reading of new data.

[0019] Next, it investigates whether new weather prediction information was prepared by the weather prediction system (102). When prepared, the weather prediction information which is numeric data is read (103).

[0020] Next, it changes into the graphic form or text showing weather intelligence from the read weather prediction information. For example, it changes into the alphabetic character with which an area is expressed from an area code to the alphabetic character (text) of a date and time of day from observation time of day and prediction time of day.

[0021] Moreover, it changes into the graphic form which expresses appropriately the weather situation as shown in drawing 6 from a prediction data type and prediction data (104). For example, it is prediction data's changing into the graphic form of the fine weather of drawing 6 with rainfall, when a prediction data type's is 0 mm/h (the rainfall of 1 hour is 0mm), changing into a cloudy graphic form, when prediction data's are 1 or less mm/h, changing into a rain graphic form, when prediction data's are 20 or less mm/h, and changing into the graphic form of heavy rain, when prediction data's are 20 or more mm/h etc.

[0022] Next, based on an area code, the map data of the area are chosen from the databases of fixed form image data (105), and the graphic form which expresses a weather situation on the map is compounded (106).

[0023] Next, it edits so that fixed form image data, such as the title, and a weather warning and a warning of service, and an advertisement, may be doubled with the image of a synthetic result and information may go into one facsimile appropriately, and it is changed and (107) memorized to the data format which can be transmitted by facsimile (108). The example of the facsimile weather intelligence image memorized eventually is shown in drawing 7.

[0024] The data for facsimile into which the newest weather intelligence always went are prepared by performing it, whenever this the processing of a series of is prepared for new weather prediction information.

[0025] Next, the weather intelligence offer art (the 1) of the weather intelligence offer service by this invention is explained using drawing 2. First, the arrival of the telephone from a user is detected (201). Next, the memorized newest facsimile weather image data is read (202), and it is turned to facsimile of a user and it transmits (203).

[0026] The weather intelligence offer art (the 2) of the weather intelligence offer service by another this invention is explained using drawing 3. First, the arrival of the telephone from a user is detected (301). Next, the sending agency telephone number notified by the advice function of the sending agency telephone number of a telephone network is detected (302). Next, the data of the area are read out of the facsimile weather image data of every place which has pinpointed and (303) memorized an addresser's address from the area code of the dispatch former telephone number etc. (304), and it is turned to facsimile of a user and it transmits (305).

[0027] The weather intelligence offer art (the 3) of the weather intelligence offer service by still more nearly another this invention is explained using drawing 4. First, the arrival of the telephone from a user is detected (401). Next, the voice of the purport which dials the telephone number of the area which wants to know weather intelligence to a user is sent out (402). Next, the telephone number of an area is acquired by receiving the dial signal transmitted by the user (403). Next, the area which offers weather intelligence from the telephone number is specified (404), and the data of the area are read out of the facsimile weather image data of memorized every place (405), and it is turned to facsimile of a user and it transmits (406).

[0028] Drawing 8 is one example of the weather intelligence offer equipment by this invention. As shown in drawing, the weather intelligence offer equipment of this invention consists of the weather intelligence data input section 801, the fixed form image data storage section 802, the fixed form image selection section 803, the graphic form text converter 804, the image composition section 805, the FAX data-conversion section 806, the offer data storage section 807, the offer data selection section 808, a sending agency telephone number detecting element 809, and the telephone transceiver section 810. Since it is already explained to the detail, the actuation is omitted.

[0029] In addition, although this example showed the example which offers weather intelligence to facsimile, it can also provide a user's personal computer etc. with weather intelligence using WWW service of the Internet. In that case, the image which compounded the graphic form showing fixed form image data and a weather situation and the text is changed into the HTML data used with WWW service of the Internet, and is memorized, and when a demand comes through the Internet from a user, it can realize by turning and sending out the HTML weather intelligence data to a user.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is flow chart drawing of the update process approach of the data for weather intelligence offer of the weather intelligence offer service by this invention.

[Drawing 2] It is flow chart drawing of the weather intelligence offer art which offers the weather intelligence of the area always beforehand defined in the weather intelligence offer service by this invention.

[Drawing 3] It is flow chart drawing of the weather intelligence offer art which specifies a sending agency with the sending agency telephone number in the weather intelligence offer service by this invention, and offers the weather intelligence of the area.

[Drawing 4] It is flow chart drawing of the weather intelligence offer art which receives the telephone number of the area which wants to know the weather intelligence from a user in the weather intelligence offer service by this invention, and offers the weather intelligence of the area.

[Drawing 5] It is drawing showing an example of fixed form image data.

[Drawing 6] It is the weather situation display graphic form in which the example of the graphic form which expresses a weather situation appropriately is shown.

[Drawing 7] It is drawing showing the example of the facsimile weather intelligence image memorized eventually.

[Drawing 8] It is the block diagram showing one example of the weather intelligence offer equipment by this invention.

[Description of Notations]

801 Weather Intelligence Data Input Section

802 Fixed Form Image Data Storage Section

803 Fixed Form Image Selection Section

804 Graphic Form Text Converter

805 Image Composition Section

806 FAX Data-Conversion Section

807 Offer Data Storage Section

808 Offer Data Selection Section

809 Sending Agency Telephone Number Detecting Element

810 Telephone Transceiver Section

[Translation done.]

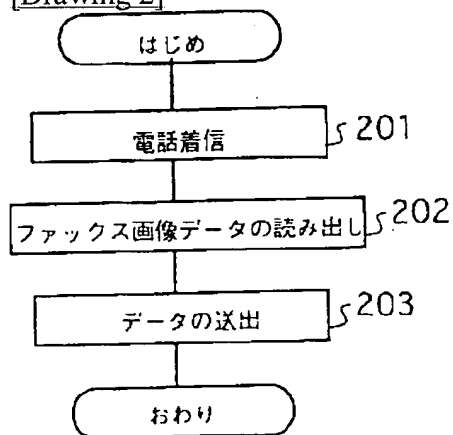
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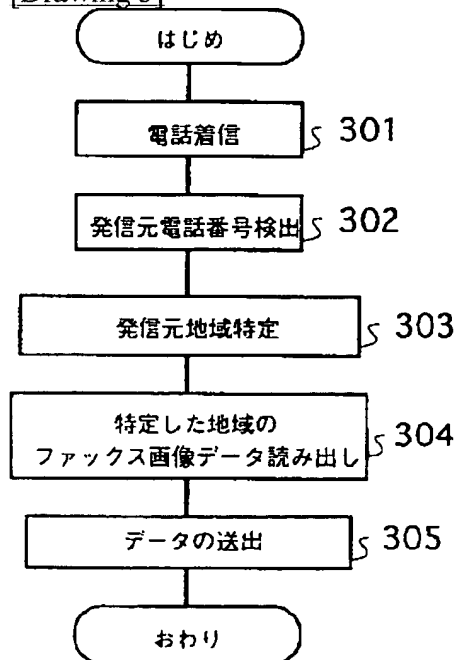
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DRAWINGS







[Drawing 2]



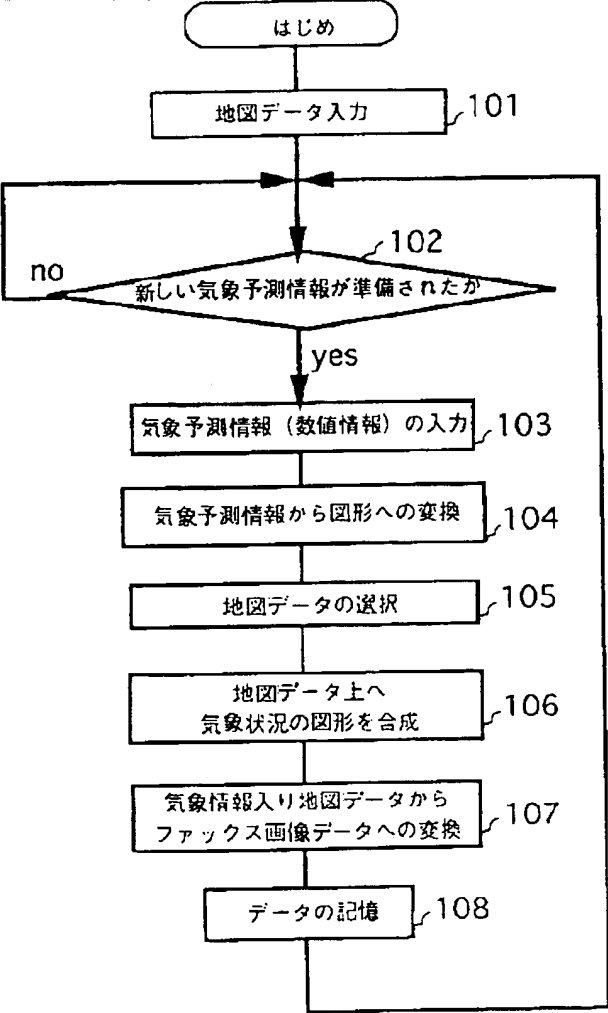
[Drawing 3]



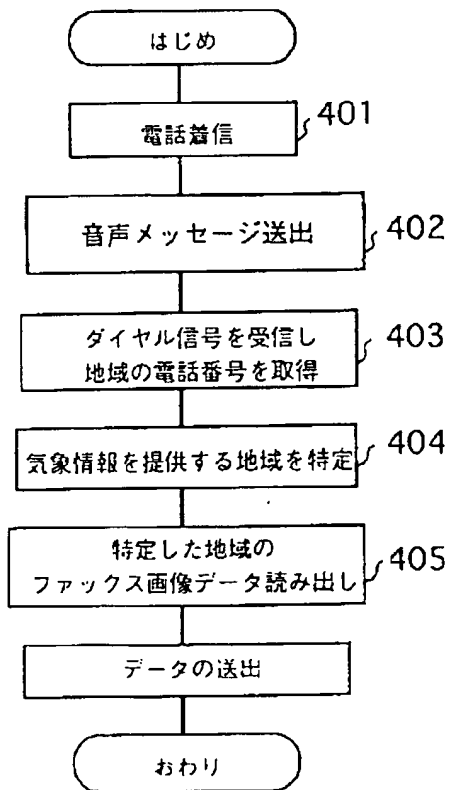
[Drawing 6]

晴天	
くもり	
雨 (降水量 20mm/h以下)	
大雨 (降水量 20mm/h以上)	
雪 (降水量 20mm/h以下)	
大雪 (降水量 20mm/h以上)	

[Drawing 1]

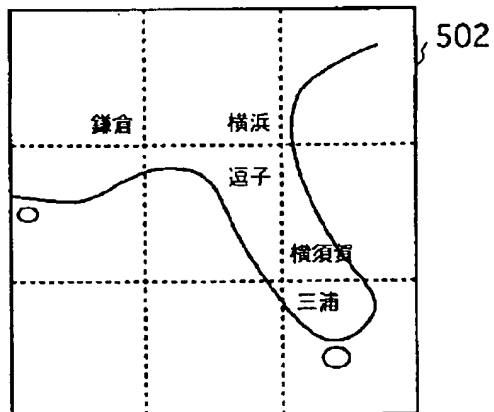


[Drawing 4]



[Drawing 5]

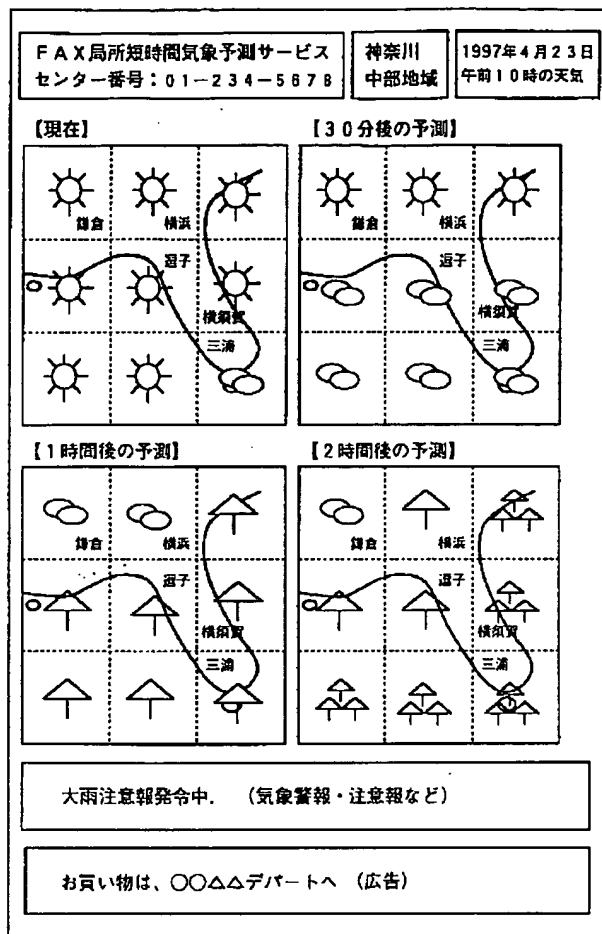
FAX局所短時間気象予測サービス
センター番号：01-234-5678 (501)



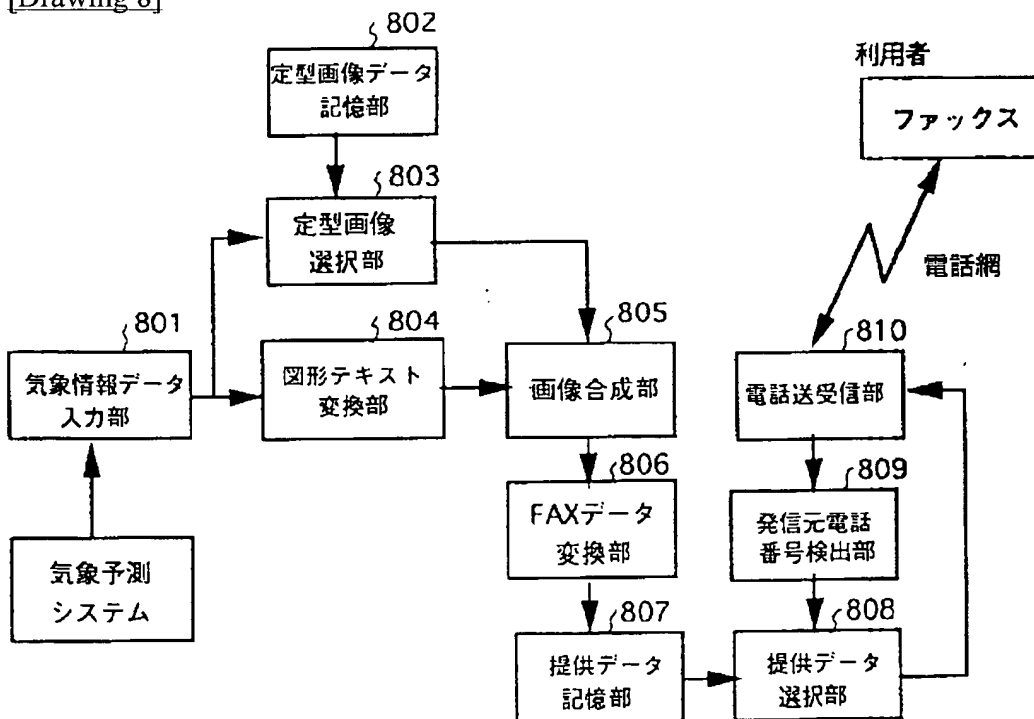
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[Drawing 7]



[Drawing 8]



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